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ABSTRACT

To determine the accomplishments of children after they had left the Chapter 1 program, a study was made of data from existing school records in six Pennsylvania school districts. The study began in March 1986 with data on 805 students who were in second grade in 1980-81. These included 490 students who were in Chapter 1 programs that year and 315 low achieving students from buildings not eligible for Chapter 1 funds. Data on achievement, attendance, retentions, and participation in other categorical programs were collected from the spring of 1980 through the spring of 1985, covering the period between the end of the students' first and sixth grades. Of six research questions, five dealt with the attainments of Chapter 1 students after they had left the program and one dealt with the patterns of categorical services students received. Results indicated that the Chapter 1 program had a positive impact on the achievement of the participants. They also suggested that Chapter 1 students differed from low achieving students from schools with a higher socioeconomic status and tended to have multiple problems associated with low achievement that makes raising their achievement levels difficult. It is concluded that continued supportive services of some type may be necessary to raise such students' achievement. (RH)

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A Five-Year Study of Chapter 1 Student Records in Selected Pennsylvania School Districts

Final Report

Prepared by:

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January 1987

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I. INTRODUCTION AND MAJOR FINDINGS

This report describes a study of data from existing school district records in six Pennsylvania school districts[1] to determine the accomplishments of children after they leave the Chapter 1 program.[2] The study began in March 1986 and used existing records to obtain information on 805 students who were in second grade in 1980-81. These included 490 students who were in Chapter 1 programs that year and 315 low achieving students from buildings that were not eligible for Chapter 1 funds. Data on achievement, attendance, retentions and participation in other categorical programs for these students were collected from the spring of 1980 through the spring of 1985. Therefore, the study covers the period between the end of first and sixth grades.

The research questions addressed by the study are listed below. The first five questions deal with the attainments of Chapter 1 students after they leave the program (Research Category 2 as defined in the Government's Request for Proposal #0015). The last question deals with the patterns of categorical services students receive (Research Category 1).

1. Is there evidence that the gains made while in Chapter 1 are sustained over time?

2. How do students who received Chapter 1 services perform on achievement or competency tests in comparison with similar students who did not receive services?

3. Why did the former Chapter 1 students leave the program?

4. What other categorical programs did former Chapter 1 students participate in since leaving the program? What has been the rate of participation in these programs and how long were services received? How do former Chapter 1 students compare with similar students who did not receive services in terms of participation in other categorical programs?

5. How do former Chapter 1 program participants compare with similar students who did not receive services in terms of retentions and attendance?

6. What is the average number of years students receive Chapter 1 services?

The major findings of the study were as follows:

<u>Research Category 1</u>:

---

1 The 1981-82 third and ninth grade students in the School District of Philadelphia could not be included in this report as the 1985 test scores were not equated to the California Achievement Test, which had been previously used, in time to be included in the analysis.

2 Also refers to its predecessor Title I.

- The most frequently occurring length of service in Chapter 1 programs (the mode) was one year. However, because some students were in the program much longer, the average length of participation in the program was 2.53 years.

- The average Chapter 1 student received 2.24 years of reading instruction.

- The average Chapter 1 student in districts which had a math program received 1.81 years of service.

Research Category 2:

- All of the former Chapter 1 reading and math groups except one made significant gains while in the program and the non-significant gain appears to be due to the small size (nine) of the group.

- The highest achieving groups of former Chapter 1 reading and math students continued to make significant gains after exit from Chapter 1. However, most of the gains occurred in the first year out of the program.

- None of the former Chapter 1 groups fell back to their pretest achievement levels after exit from the program. However, there was a definite leveling off or decrease in scores for all the reading groups and the lowest math students after the first year out of the program.

- After exit from the program most of the groups of former Chapter 1 students made gains that were comparable to the low achieving students from schools which were not eligible for Chapter 1 funds. Only the highest achieving groups of former Chapter 1 math students, though, narrowed the achievement gap.

- There were not significant differences between Chapter 1 and comparison students in participation in special education programs.

- The Chapter 1 students were retained more and had more absences than the comparison students. However, not all of the differences were statistically significant.

- All of the groups of former Chapter 1 students except one had significantly more racial/ethnic minorities than the comparison group.

- All of the students in the study who participated in migrant or bilingual/ESL programs were Chapter 1 students.

- Most of the Chapter 1 students were above the district grade equivalent criteria when services were terminated. However, many were still eligible for and appeared to be in need of service at the time of termination.

These results indicate that the Chapter 1 program had a positive impact on the achievement of the participants. They also suggest that Chapter 1 students are different from low achieving students from schools with a higher socioeconomic status and tend to have multiple problems associated with low achievement that make raising their achievement levels a difficult task; and, that continued supportive services of some type may be necessary if that is the goal.

II. DESCRIPTION OF DISTRICTS

School District Characteristics

The criteria for the selection of districts and rationale were as follows:

Criteria	Rationale
1. Each district must have buildings that were eligible for Chapter 1 funds and buildings that were not.	1. Eligible buildings usually serve all students who qualify for Chapter 1 at some time. Therefore, comparison groups were selected from buildings that did not receive Chapter 1 funds.
2. The district needs assessment should be based on data from all district buildings.	2. Common standardized test data were available for all students.
3. Districts should have a Chapter 1 program in each grade to be studied.	3. In order to explore the various reasons services were terminated the opportunity must exist for continuance in the program.

The six districts participating in the study included three medium sized districts (Altoona, Bethlehem and Reading) and three small districts (Elizabeth Forward, Nazareth and Norwin). In addition, data were collected on 1981-82 third and ninth grade students from the School District of Philadelphia. However, as previously noted, the 1985 test scores were not equated to the California Achievement Test, which had been given in previous years, in time for the district to be included in the analysis.

Table 1 presents the characteristics of the participating districts in 1980. Since one of the criteria for the selection of project sites was that the districts must have buildings which were not eligible for Chapter 1 funds, the districts were more affluent than the state as a whole. Enrollment in all of the districts declined during the study period and the percentage of children from low income families (based on free/reduced lunches) rose to a low of 13 percent and high of 47 percent in 1985.

Table 1
1980 District Characteristics

District	Population	Public School Enrollment	Medium Family Income	% Buildings With Chapter 1 Programs	% Children From Low Income Families
Altoona	70,018	10,500	$17,257	44	16
Bethlehem	93,956	12,748	$22,426	48	17
Elizabeth Forward	22,496	4,130	$22,339	88	10
Nazareth	18,425	3,094	$22,263	83	8
Norwin	37,528	7,129	$22,219	64	19
Reading	78,686	11,779	$16,262	63	38

Chapter 1 Programs

Table 2 shows the Chapter 1 allocations for the districts during the study period. The data show decreased funding for all of the districts from 1980-81 through 1982-83 due to decreased federal funding. Funding increased in each of the subsequent years and by 1984-85 the allocations for four of the districts had increased beyond the 1980-81 levels. Of the remaining districts, one was back at about its 1980-81 level and the other was still below due to changes in the census data used to determine district allocations.

Table 2
Chapter 1 Allocations By District

	1980-81	1981-82	1982-83	1983-84	1984-85
Altoona	$895,497	$844,238	$822,899	$837,438	$917,162
Bethlehem	$611,024	$578,936	$563,001	$746,240	$844,648
Elizabeth Forward	$124,141	$119,246	$113,538	$ 96,507	$ 98,028
Nazareth	$ 95,304	$ 91,176	$ 89,089	$ 81,749	$ 94,342
Norwin	$136,732	$130,399	$127,940	$273,991	$307,959
Reading	$844,152	$788,710	$759,599	$1,439,346	$1,609,173

Table 3 shows the number of public school students served by the Chapter 1 programs in 1980-81 and 1984-85 and that half of the districts served more students in 1984-85 than at the beginning of the study period. The table also shows that there were not major changes in the grades served and that only one district experienced a substantial increase in participation by minority groups.

Table 3
Chapter 1 Programs by District

	1980-81			1984-85		
	Public School Enrollment	Grades Served	% Non-White	Public School Enrollment	Grades Served	% Non-White
Altoona	681	1-12	2	1,012	K-12	3
Bethlehem	1,180	K-9	50	1,512	K-8	58
Elizabeth Forward	443	1-12	8	316	1-12	8
Nazareth	215	1-12	--	136	1-12	1
Norwin	284	1-9	1	445	2-12	1
Reading	1,607	1-11	41	1,348	1-11	41

Table 4 shows the services that were provided by the Chapter 1 programs during the study period. The data show that all of the districts had reading programs and that three had math programs during the study period. However, since the math program in Nazareth was only available to elementary students in grades four through six no data were collected on that program. The data also show that two of the districts had English as a Second Language (ESL) programs and that two provided programs in the summer. In addition, the district that lost funding (Elizabeth Forward) discontinued providing social work, guidance and psychological services and three of the districts which received additional funds provided additional services in 1984-85.

Table 4
Chapter 1 Services by District

	1980-81	1984-85
Altoona	Reading Mathematics	Reading Mathematics Pre-School
Bethlehem	Reading Mathematics Preschool Social Work, Guidance, Psychological Services	Reading English as a Second Language Mathematics Preschool Social Work, Guidance, Psychological Services
Elizabeth Forward	Reading Social Work, Guidance, Psychological Services	Reading
Nazareth	Reading* English - Other Language Arts* Mathematics* Transportation**	Reading Mathematics** Preschool** Transportation**
Norwin	Reading*	Reading* Math
Reading	Reading English as a Second Language Social Work, Guidance, Psychological Services Health and/or Nutrition	Reading English as a Second Language Social Work, Guidance, Psychological Services Health and/or Nutrition

* Services were provided during the regular term and summer.
**Services were only provided in the summer.

Table 5 summarizes the Chapter 1 programs provided to the students in the study as second graders in 1980-81 and sixth graders in 1984-85. The data show that there were not major changes in the programs during the study period.

Other Services

In addition to the Chapter 1 program all of the districts had special education programs, two had ESL (English as a Second Language) programs and one had a migrant education program. It should also be noted that two of the districts (Nazareth and Bethlehem) had district funded remedial reading programs in all schools and that the major difference between the services provided to Chapter 1 and regular students in these districts was the small group instruction provided by Chapter 1.

Table 5
Description of Chapter 1 Programs

1980-81

District	Class Structure	Providers	Maximum Staff/Pupil Ratio	Maximum Days/Week	Maximum Minutes/Day	Maximum Weeks Service
Altoona	Regular classroom and laboratory	Chapter 1 Specialist + Aide	1 to 5	5	30	36
Bethlehem	Laboratory	Chapter 1 Teacher + Aide	1 to 8	3	40	36
Elizabeth Forward	Pullout	Chapter 1 Specialist + Aide	1 to 5	5	25	30
Nazareth	In home tutoring Summer Program	Chaper 1 Specialist	1 to 1 1 to 5	3 5	30 210	22 6
Norwin	Pullout and Summer Program	Certified Chapter 1 Reading Specialist	1 to 4	4	30	30
Reading	Pullout	Chapter 1 Specialist + Aide + Teacher	1 to 3	5	30	22

1984-85

Altoona	Regular classroom and laboratory	Chapter 1 Specialist + Aide	1 to 5	5	30	36
Bethlehem	Laboratory	Chapter 1 Teacher + Aide	1 to 8	2	50	36
Elizabeth Forward	Pullout	Chapter 1 Specilaist + Teacher	1 to 10	4	25	30
Nazareth	Pullout and Summer Program	Specialist + Chapter 1 Aide	1 to 4	4	30	32
Norwin	Pullout and Summer Program	Certified Chapter 1 Reading Specialist	1 to 6	5	30	34
Reading	Pullout	Certified Chapter 1 Reading Specialist	1 to 6	5	50	36

III. PROCEDURES

Identification of Chapter 1 Students

Each year Pennsylvania school districts report standardized test scores, with pre and posttests, on all Chapter 1 students to the state education agency. These data were used to identify the students from the districts participating in the study who were in the second grade Chapter 1 programs in 1980-81. The data were also used to obtain information on participation in the program each consecutive year up to 1984-85.

Identification of Comparison Students

All of the districts administered a standardized test to all students each spring during the study period. The tests used were as follows:

Altoona - 1973 Comprehensive Test of Basic Skills
Bethlehem - 1978 SRA Achievement Test
Elizabeth Forward - 1978 Iowa Test of Basic Skills
Nazareth - 1978 SRA Achievement Test
Norwin - 1978 Iowa Test of Basic Skills
Reading - 1977 Metropolitan Achievement Test

All of the districts but one used the results of the first grade achievement test and teacher recommendation to select students for participation in the second grade Chapter 1 program in 1980-81. To replicate this procedure as closely as possible in 1986, all second grade students from the buildings which were not eligible for Chapter 1 funds in 1980 who met the criteria used by the district to select Chapter 1 students were included in the comparison group. The criteria for four of the districts were as follows:

District	Grade Equivalent Score
Bethlehem	1.8
Elizabeth Forward	1.8
Nazareth	1.7
Norwin	1.7

The two exceptions to this procedure were as follows:

Altoona Area School District - since the first grade test was administered in the fall, rather than spring, in 1979-80 and the criteria for placement in second grade Chapter 1 programs was achievement at or below the 49th percentile, the same procedure was used to select the comparison students. In addition, students whose spring second grade achievement scores indicated that they would have been in Chapter 1 if their school had had a program were included in the comparison group as those scores were closer to the beginning of second grade.

Bethlehem Area School District - since first grade reading levels were used to select the Chapter 1 students, the same procedure was used to select the comparison students. Students with a 1980 grade equivalent score above 1.9 were excluded, as that was the highest score for the Chapter 1 students.

Any comparison students who subsequently participated in Chapter 1 were excluded from the study. This resulted in the number of students shown in Table 6.

Table 6
Students by District

District	Chapter 1 Students	Comparison Students
Altoona	106	97
Bethlehem	132	91
Elizabeth Forward	38	7
Nazareth	16	25
Norwin	36	15
Reading	162	80
TOTAL	490	315

Table 7 presents the distribution of low income students from the Chapter 1 and comparison schools in 1980-81. The data show large differences in most districts and for the districts as a whole.

Table 7
1980-81 Percent of Low Income Students From Chapter 1 and Comparison Schools

	% Low Income from Chapter 1 Schools	% Low Income from Comparison Schools
Altoona	40.76	8.42
Bethlehem	39.37	8.40
Elizabeth Forward	10.95	5.00
Nazareth	10.37	3.10
Norwin	31.75	14.25
Reading	64.09	25.56
All Districts	39.88	12.32

Data Collection

In April 1986, the Chapter 1 coordinators from the participating districts met with the principal investigator to discuss implementation of the study, the data to be collected, data collection and coding instruments, identification of comparison students, visits by field staff and anticipated problems. After this meeting four field staff, who were employed to collect the data, participated in a day of training on the purpose of the study, background of

Chapter 1, data collection and coding procedures, quality control, identification of comparison students and procedures to be followed at the project sites.

Site visits took place during May and June. During the initial visit the principal investigator and field person assigned to the site identified the comparison students using the procedures previously described. The field staff then completed the data collection, which required two to five days per district. In August, after preliminary analysis of the data, the principal investigator returned to five of the sites to collect additional data which were needed. Most of the data were collected from student permanent records.

Determination of Reason for Termination of Chapter 1 Services

Since information was not available on the reason Chapter 1 services were discontinued, the data were examined to determine probable causes after the data collection was completed. The reasons identified were as follows:

Moved out of the district.
Tested out.
Unknown, still below grade equivalent criteria.
Unknown, no test score.
Unknown, no grade.
Parent refusal.

The grade equivalent criteria used to determine if students were still eligible for services, using the state guidelines, are listed below. Students who were out of the program but below the criteria in the district which always served all eligible students were coded as being out due to parent refusal.

Grade	Grade Equivalent Criteria for Placement
3	2.4
4	3.0
5	4.0
6	5.0

Chapter 1 students who were out of the program and scored above the criteria listed above were coded as having tested out of Chapter 1. This group was further classified as being above or at or below the 49th percentile for research purposes.

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences. All students were included in the analysis whenever possible. However, the analysis dealing with achievement data and the attainments of students after leaving Chapter 1 focused on only students who had test scores each of the six years included in the study.

Since, as previously explained, the Altoona Area School District tested in the fall of 1979, spring 1980 scores for the district were interpolated from the fall 1979 and spring 1981 scores. After this procedure was carried out,

the 1980 test scores for the students included in the analysis of the achievement data (those with test scores each year) were as follows:

Table 8
1980 Reading Scores
Students with Six Years of Scores

NCE Scores	Chapter 1 Students					Comparison Students				
District	N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
Altoona	51	44.36	12.80	19.90	79.36	25	43.95	8.91	26.00	57.89
Bethlehem	58	29.34	10.43	6.70	51.60	54	40.18	6.01	27.20	48.90
Elizabeth Forward	19	44.56	11.28	18.90	61.70	3	46.10	3.12	42.50	47.90
Nazareth	9	35.20	8.6	25.30	45.20	11	39.54	4.71	33.00	46.30
Norwin	21	26.07	15.31	1.00	61.70	14	24.53	5.91	13.10	31.50
Reading	75	28.06	10.47	1.00	45.70	37	34.07	9.20	6.70	44.70
All Districts	233	33.39	13.59	1.00	79.36	144	37.82	9.17	6.70	57.89
Grade Equivalent Scores										
Altoona	51	1.5	.45	.7	2.8	25	1.5	.43	.8	2.4
Bethlehem	58	1.0	.45	.2	2.9	54	1.4	.25	.9	1.8
Elizabeth Forward	19	1.8	.44	.9	2.6	3	1.7	.12	1.6	1.8
Nazareth	9	1.5	.47	.8	2.1	11	1.4	.19	1.1	1.6
Norwin	21	1.5	.63	.1	2.7	14	1.5	.17	1.2	1.7
Reading	75	1.5	.31	.1	2.6	37	1.6	.20	1.1	1.9
All Districts	233	1.4	.48	.1	2.9	144	1.5	.28	.8	2.4

N = Number of students
SD = Standard deviation
Minimum = Lowest score
Maximum = Highest score

Table 9
1980 Math Scores
Students with Six Years of Scores

NCE Scores	Chapter 1 Students					Comparison Students				
District	N	Mean	SD	Mini-mum	Maxi-mum	N	Mean	SD	Mini-mum	Maxi-mum
Altoona	46	43.42	10.52	14.76	60.09	44	42.54	7.24	22.44	53.33
Bethlehem	35	32.76	10.69	6.70	59.30	63	41.49	6.05	21.80	48.50
All Districts	81	38.82	11.79	6.70	60.09	107	41.92	6.55	21.80	53.33
Grade Equivalent Scores										
Altoona	46	.8	.49	.1	1.7	44	.5	.30	.30	1.4
Bethlehem	35	1.1	.45	.1	2.2	63	1.4	.26	.7	1.7
All Districts	81	.9	.48	.1	2.2	107	1.0	.70	.1	1.7

Preliminary analysis of the data showed that students who were in Chapter 1 programs the longest tended to be the lowest achieving students. Therefore, it was determined that analysis of the achievement data should be based on the length of participation in the program. Further, since students who were in Chapter 1 the last year of the study were not former Chapter 1 students and the remaining students could have been out of the program for one to four years of the study, it was determined that the analysis for Research Category 2 would focus on four groups of Chapter 1 students who had been out of the program for varying lengths of time. Initially these groups were as follows:

IOOOO - students who had six years of test scores and were in Chapter 1 in 1980-81 but out of the program for the remainder of the study.

IIOOO - students who had six years of test scores and were in Chapter 1 the first two years of the study but out the last three.

IIIOO - students who had six years of test scores and were in Chapter 1 the first three years of the study but out the last two.

IIIIO - students who had six years of test scores and were in Chapter 1 the first four years of the study but out the last year.

Analysis of the data using these groups showed that there were 11 reading students in the third group and 13 in the fourth group and fewer students in the math groups. Since it was unlikely that significant differences would be detected with such small numbers, various other groups were considered. This resulted in the decision to retain the first two groups as previously described and replace the last two groups with the following:

IEIOO - students with six years of test scores who were in Chapter 1 the first and third year and out the last two. In the second year some students were in the program and some were out, hence, the designation E for either.

IEEIO - students with six years of test scores who were in Chapter 1 the first and fourth year of the study and out the fifth.

This procedure increased the number of reading students in these groups to 18 and 28 respectively and the math groups to 9 and 11. Table 10 shows the years of Chapter 1 service received by these groups.

Table 10
Years of Service for IEIOO and IEEIO Students
With Six Years of Test Scores

Reading	IEIOO	IEEIO
2 Years	7	7
3 Years	11	8
4 Years	--	13
Mean	2.61	3.21
Math		
2 Years	--	2
3 Years	9	1
4 Years	--	8
Mean	3.00	3.55

Table 11 shows the total number of students who had six years of test scores in each group, the mean 1980 age and composition of the groups by sex and ethnic group. The data also show any significant differences from the comparison group, which is designated OOOOO as the students did not receive Chapter 1 services during the years covered in the study. The data show that all of the groups of former Chapter 1 students except the IIOOO math students were significantly different from the comparison students in terms of ethnic distribution. In addition, three of the reading groups were significantly older than the comparison students at the beginning of the study due to previous retentions.

Table 11
Sex, Race and Age By Group
Students With Six Years of Scores

Reading	Total N	Sex		Ethnic Group		Mean Age 9/80
		Male	Female	White (Excluding Hispanics)	Minorities[1]	
00000	144	85	59	134	10	7.28
I0000	73	38	35	48	24*	7.48*
II000	36	18	18	25	11*	7.48*
IEI00	18	12	6	13	5*	7.32
IEEI0	28	17	11	16	11*	7.58*
Math						
00000	107	60	47	105	2	7.19
I0000	29	9	20*	25	4*	7.25
II000	15	10	5	14	1	7.21
IEI00	9	5	4	5	4*	7.56
IEEI0	11	5	6	8	3*	7.48

* Significant at or beyond the .05 level.
[1] Includes blacks, Hispanics and orientals.

The other analyses performed included frequency distributions, measures of central tendency and statistical tests to determine significant differences. These are presented in the next section with the results.

IV. RESULTS

Research Category 1

1. What is the average number of years students receive Chapter 1 services?

Table 12 shows the number of years that the 490 Chapter 1 students in the study received services. The data show that the majority of the students did not participate in a Chapter 1 math program. However, as noted in previous sections, only two of the districts had a math program. The data also show the most frequently occurring length of service was one year and that the proportion of the students participating decreased as length of service increased.

Table 12
Years of Chapter 1 Service

	Reading		Math	
Years	N	%	N	%
0	13	2.7	309	63.1
1	184	37.6	64	13.1
2	120	24.5	46	9.4
3	70	14.3	25	5.1
4	50	10.2	31	6.3
5	53	10.8	15	3.1
	490	100.0	490	100.0

Table 13 shows that the Chapter 1 students participated in the program an average (mean) of 2.53 years between 1980-81 and 1984-85. By service, the averages were 2.24 years of reading instruction and .88 years of math instruction. However, when only the two districts which had math programs were included in the analysis, the average length of participation in math programs was 1.81 years.

Table 13
Mean Years of Chapter 1 Service
1980-81 to 1984-85

All Chapter 1 Students (n=490)	Mean	SD	Range
Reading and/or Math	2.53	1.51	1-5
Reading	2.24	1.40	0-5
Math	.88	1.41	0-5
Students in Districts With Reading and Math Programs (n=238)			
Reading and/or Math	3.14	1.50	1-5
Reading	2.66	1.56	0-5
Math	1.81	1.55	0-5

The analyses above were repeated for those pupils who were in this district all five years of the study to show the length of Chapter 1 services without losses due to mobility. The most frequently occurring length of service was still one year. However, the average length of service increased approximately two months (Table 14).

Table 14
Mean Years of Chapter 1 Service
for Students in District All Five Years

All Chapter 1 Students (n=356)	Mean	SD	Range
Reading and/or Math	2.78	1.54	1-5
Reading	2.44	1.45	0-5
Math	1.08	1.52	0-5
Students in Districts With Reading and Math Programs (n=195)			
Reading and/or Math	3.29	1.52	1-5
Reading	2.78	1.57	0-5
Math	1.97	1.57	0-5

The average length of participation in Chapter 1 prior to second grade was .42 years. However, some of the four districts for which data were available

did not have programs in kindergarten or first grade and/or some of the students may have participated in Chapter 1 programs in other districts prior to second grade.

Any comparison students from the buildings which were not eligible for Chapter 1 funds who subsequently participated in Chapter 1 were deleted from the study. Therefore, none of the comparison students received Chapter 1 services from 1980-81 to 1984-85. None are known to have participated in Chapter 1 in prior to 1980-81 either.

Research Category 2

1. Is there evidence that the gains made while in Chapter 1 are sustained over time?

   A. Reading

Table 15 shows the mean spring 1980 pretest, posttest (at the end of the last year in Chapter 1 reading programs) and 1985 scores for the four groups of former Chapter 1 being studied. Only students who had six years of test scores were included in the analysis. Repeated measures analysis of variance showed significant differences across the three data points for each of the groups. F ratios ranged from 4.43 to 36.92. Subsequent t-tests showed that all of the groups made significant gains between the pretest and posttest, or while in Chapter 1. These results are presented in Table 15.

Table 15
Chapter 1 Reading Sustained Effects
Students with Six Years of Test Scores

Pattern of Service[1]	N	Mean Pretest NCE	Mean Posttest NCE	Mean 1985 NCE
I0000	73	34.39	42.57*	50.42*
II000	36	33.90	41.07*	46.36*
IEI00	18	28.44	37.15*	40.24
IEEI0	28	33.45	42.50*	(40.97)

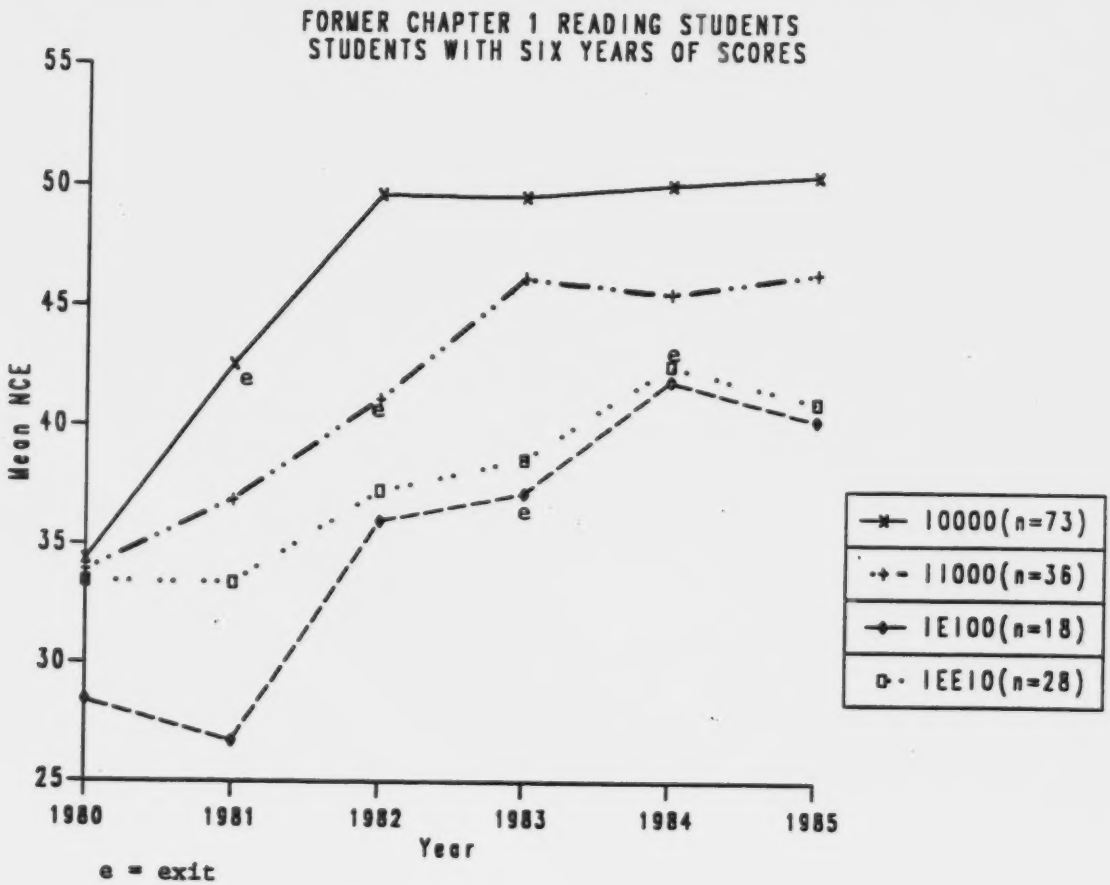
*Gain significant at or beyond the .05 level
[1] I = in Chapter I, 0 = out of Chapter 1, E = either in or out of Chapter I.

Table 15 also shows that the IEI00 group made a small gain during the two years between the pretest and 1985 test. In contrast, the group with the most years in Chapter 1 (IEEI0) experienced a slight loss in the year between the posttest and 1985. However, t-tests showed that neither of the 1985 scores were significantly different than the posttest scores. In addition, Table 15 shows that the groups which had only one or two years of Chapter 1 service continued to make significant gains between the posttest and 1985. In other words, all of the groups sustained the gains made while in

Chapter 1 during the one to four years after exit from the programs and two made continued gains after exit.

Figure 1 shows the data from Table 15 and the data points not included in the table. The figure illustrates the negative correlations found between the number of years of Chapter 1 reading service received and total reading gain.[1] In other words, the better students make the largest gains while in Chapter 1 and are promoted out. The figure also shows that all of the groups except the IEEIO group continued the gains made in Chapter 1 during the first year out of the program. Similar findings were reported in the Sustained Effects Study (Kenoyer, 1981). Of particular interest though, is that the scores for the I0000 and II000 groups abruptly leveled off after the first year out of Chapter 1 and that the scores for the lowest groups dropped during the last year of the study.

Figure 1

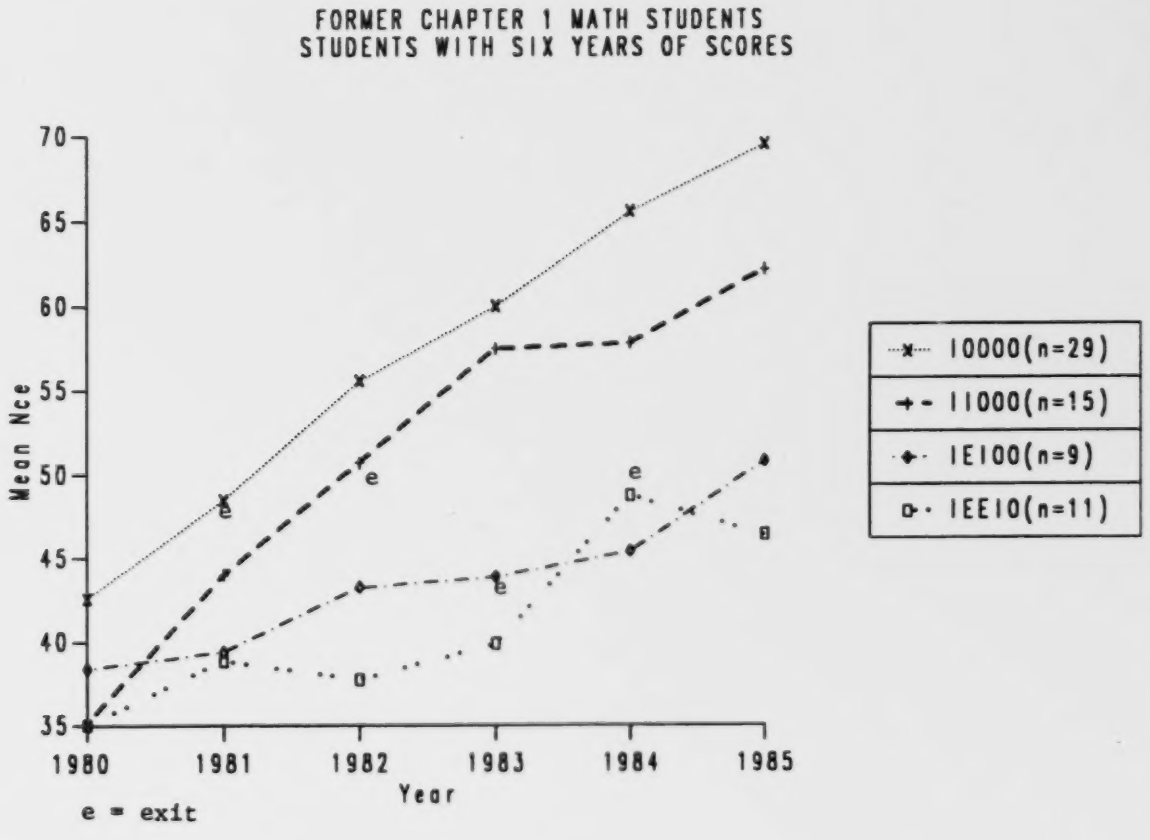


1 Correlations ranged from -.28 ($p < .001$) for all students in the study to -.32 ($p < .001$) for the Chapter 1 reading students with six years of scores.

B. Math

Figure 2 shows the scores for the four groups of former Chapter 1 math students. The figure illustrates, again, the negative correlation between total math gain and years of participation in Chapter 1 math programs[1], with the lowest scoring students receiving the most service. Another similarity to the data for reading was that all of the groups except the lowest (IEEIO) continued to make gains during the first year out of Chapter 1. However, the gain for the IEIOO students was not significant. Most notable, though, is that the two highest groups continued to make gains after the first year out of the program, while the reading scores abruptly leveled off. Presumably this may be related to the subject area, higher posttest scores in math and/or both.

Figure 2



1 -.26 for Chapter 1 math students with six years of test sores.

To test for significant differences, repeated measure analysis of variance was used on the pretest, posttest and 1985 scores for each of the four groups. The results showed significant differences for all of the groups except the third, which had only nine students (Table 16). F ratios ranged from 6.24 to 53.66. Subsequent t-tests showed that all of the groups except the IEI00 students made significant gains between the pretest and posttest at the time of exit from the program. However, it appears that the gain for the IEI00 group was not significant due to the small number of students, since the I0000 group (n=29) made a similar gain (5.87 NCEs) which was significant.

Table 16
Math Sustained Effects
Students with Six Years of Test Scores

Pattern of Service	N	Mean Pretest NCE	Mean Posttest NCE	Mean 1985 NCE
I0000	29	42.60	48.47*	69.54*
II000	15	35.16	50.68*	62.15*
IEI00	9	38.42	43.90	50.79
IEEI0	11	35.04	48.75*	(46.41)

* Gain significant at or beyond the .05 level.

The results in Table 16 are similar to those for reading between the posttest and the 1985 test. The highest groups (I0000 and II000) both made significant gains during that period; IEI00 students made a gain that was not significant (again apparently due to the size of the group); and, the lowest group (IEEI0) showed a non-significant decrease in scores. Therefore, all of the groups except the third made significant gains while in Chapter 1 and sustained the gains after exit from the program. Further, it appears that the gains made by the third group (7.89 NCEs) were not statistically significant due to the small number of students since gains of similar magnitude or less were significant when more students were involved.

C. Reading and Math

The data show that the Chapter 1 students made significant gains while in the reading and math programs and, in most instances, continued the gains during the first year out of the program and did not fall back to their 1980 test level. However, subsequent analyses showed that most of the gain after exit from Chapter 1 occurred in the first year out of the program and that only the highest group of Chapter 1 math students made significant gains after the first year

out of the program. These results are presented in Table 17. The analyses for the lowest groups of students were the same as those previously presented and are not shown.

Table 17
Mean Posttest, Spring After Exit and 1985 Scores
Students With Six Years of Scores

Pattern of Service	N	Mean Post-Test NCE	Mean Spring After Exit NCE	Mean 1985 NCE
Reading				
I0000	73	42.57	49.63*	50.42
II000	36	41.09	46.17*	46.36
IEI00	18	37.15	41.87	40.24
Math				
I0000	29	48.47	55.56*	69.54*
II000	15	50.68	57.48	62.14
IEI00	9	43.90	45.41	50.79

*Gain significant at or beyond the .05 level.

2. How do students who received Chapter 1 services perform on achievement or competency tests in comparison with similar students who did not receive services?

Since it is not possible to randomly assign students who are eligible for Chapter 1 services to experimental and control groups and most buildings which receive Chapter 1 funds usually serve all students who qualify for the program at some time, there are no true comparable students who do not receive services. Students in the same building who did not receive services typically were not eligible, and students from different buildings or districts are by definition different in other ways. The reader should keep these points in mind as the comparisons which follow are based on students who met the grade equivalent criteria for Chapter 1 but never received services because they attended schools which did not qualify for Chapter 1 funds. These schools had a higher socioeconomic status, as was pointed out in Chapter 3, and research has shown that schools with large proportions of poor students are more likely to exhibit lower average achievement than other schools (Kennedy, 1986).

Table 18 shows the mean 1980 scores for the comparison and Chapter 1 students and that the comparison students began with considerably higher scores than the bottom groups of former Chapter 1 students. It can also be seen that the I0000 students were most like the comparison group at the beginning of the study.

Table 18
Mean 1980 Test Scores
Students with Six Years of Scores

Pattern of Service	Reading	Math
00000	37.76	41.92
I0000	34.39	42.60
II000	33.90	35.16
IEI00	28.44	38.42
IEEI0	33.45	35.04

T-tests showed that all of the groups of former Chapter 1 students except the II000 math students scored significantly lower than the comparison students on the test at the end of their last year in Chapter 1 (posttest). Therefore, analysis of covariance was used to control for differences in posttest scores when comparing scores for the spring after exit from Chapter 1 and scores at the end of the study period.

The top part of Table 19 shows the posttest, spring after exit, spring after exit scores after adjustment for differences in posttest scores and results of the analysis of covariance for comparison and former Chapter 1 reading students. The data show that none of the groups of former Chapter 1 students scored significantly different than the comparison students after one year out of Chapter 1 and that the first group of former Chapter 1 students actually scored slightly higher than the comparison group. However, the scores for the IEEI0 students decreased slightly. The bottom part of Table 19 shows that at the end of the study, in 1985, there still was not a significant difference between the first group of former Chapter 1 and comparison students. However, the Chapter 1 reading students had made little gain since the first year out of the program and scored lower than the comparison students. No significant difference was found for the IEI00 students either, but the comparison students improved to where they scored significantly higher than the II000 students. The analysis for the IEEI0 students was the same as in the top part of the table, as the 1985 score for that group was the first year out of Chapter 1, and showed no significant difference from the comparison group.

Figure 3 presents the unadjusted scores graphically and illustrates the gap between the Chapter 1 and comparison students throughout most of the study and leveling or drop off in scores for the former Chapter 1 students after the first year out of the program.

Table 19
Comparison of Former Chapter 1 and Non-Chapter 1
Reading Students
Students with Six Years of Scores

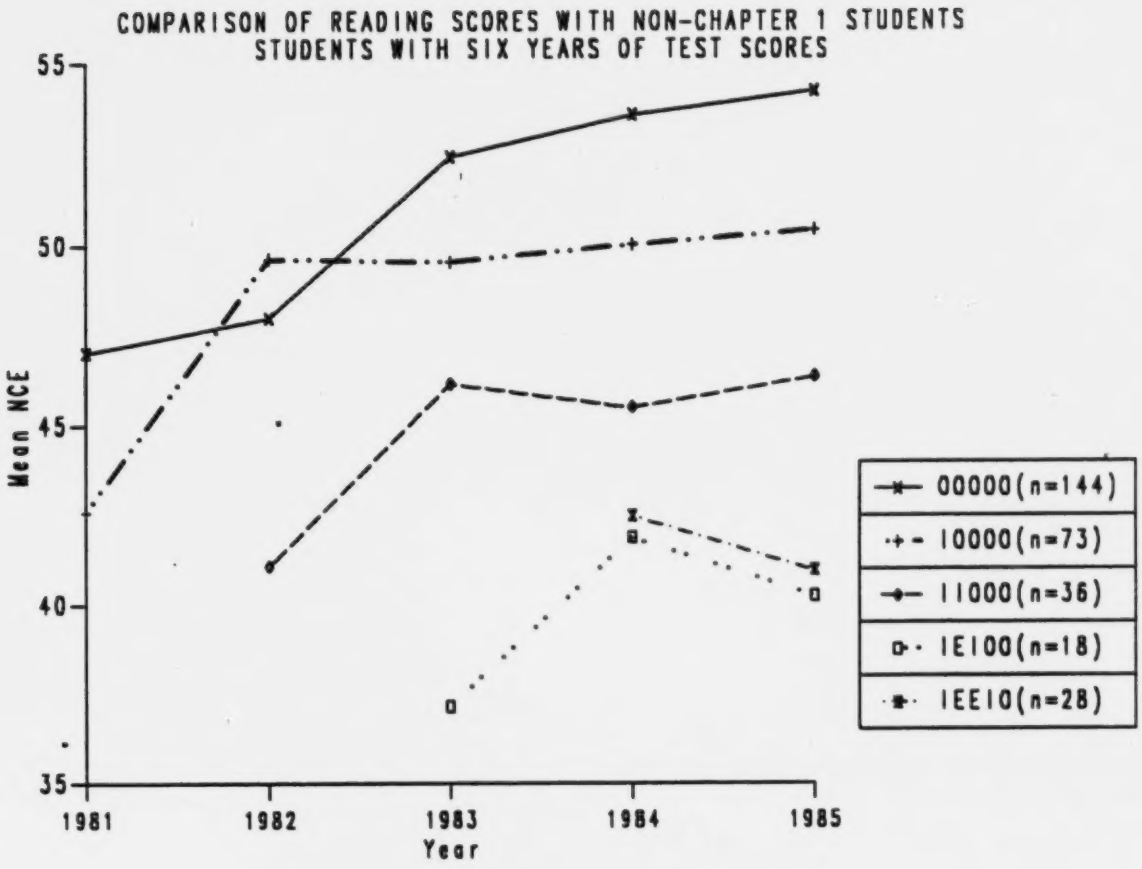
Analysis of Spring
After Exit Scores

Pattern of Service	N	Mean Posttest	Mean NCE Spring After Exit	Adjusted Mean NCE Spring After Exit
00000	144	47.03	48.00	47.45
I0000	73	42.57	49.63	50.73
	Analysis of Covariance F=3.24 df=1,214 p=ns			
	% of Varance accounted for=.16			
00000	144	48.00	52.44	51.88
II000	36	41.07	46.17	49.71
	Analysis of Covariance F=0.87 df=1,177 p=ns			
	% of Variance accounted for=.45			
00000	144	52.44	53.60	52.30
IEI00	18	37.15	41.87	50.21
	Analysis of Covariance F=0.66 df=1,159 p=ns			
	% of Variance accounted for=.41			
00000	144	53.60	54.25	53.25
IEEI0	28	42.50	40.97	46.13
	Analysis of Covariance F=10.07 df=1,169 p=.00			
	% of Variance accounted for=.45			

Analysis of
1985 Scores

Pattern of Service	N	Mean Posttest	Mean 1985 NCE	Adjusted 1985 NCE
00000	144	47.03	54.25	53.83
I0000	73	42.57	50.42	51.25
	Analysis of Covariance F=2.25 df=1,214 p=ns			
	% of Variance accounted for=.13			
00000	144	48.00	54.25	53.35
II000	36	41.07	46.36	49.53
	Analysis of Covariance F=3.96 df=1,177 p=.05			
	% of Variance accounted for=.41			
00000	144	52.44	54.25	53.15
IEI00	18	37.15	40.24	48.12
	Analysis of Covariance F=2.14 df=1,159 p=ns			
	% of Variance accounted for=.48			

Figure 3
Reading



In contrast to the results in Table 19, t-tests of the reading gain scores showed that none of the Chapter 1 groups made gains between the posttest and 1985 test that were significantly different than the gains made by the comparison group. These results are presented in Table 20.

Table 20
T-Tests of Reading Gains Between Posttest and 1985
Students with Six Years of Scores

Pattern of Service	N	Gain	t	p
00000	144	7.23	.28	ns
I0000	73	7.85		
00000	144	6.25	.48	ns
II000	36	5.28		
00000	144	1.82	.32	ns
IEI00	18	3.09		
00000	144	.65	.82	ns
IEEI0	28	-1.52		

Table 21 presents the results of the comparisons between former Chapter 1 math students and students who met the criteria for participation in Chapter 1 math programs. The top part of the table shows that there were no significant differences between I0000, II000 and IEEI0 and comparison students at the end of the first year out of the program. In addition, the I0000 students scored slightly higher than the comparison students. However, the IEI00 students made a very slight gain in the first year out of Chapter while the comparison students made a much larger gain. Therefore, the groups were significantly different in 1984. In contrast, the bottom part of Table 21 shows that at the end of the study there were no significant differences between II000, IEI00 and IEEI0 and comparison students. The I0000 students, though, scored significantly higher than the comparison students. Figure 4 presents these results graphically.

Table 21
Comparison of Former Chapter 1 and Non-Chapter 1 Math Students
Students with Six Years of Test Scores

Analysis of Spring
After Exit Scores

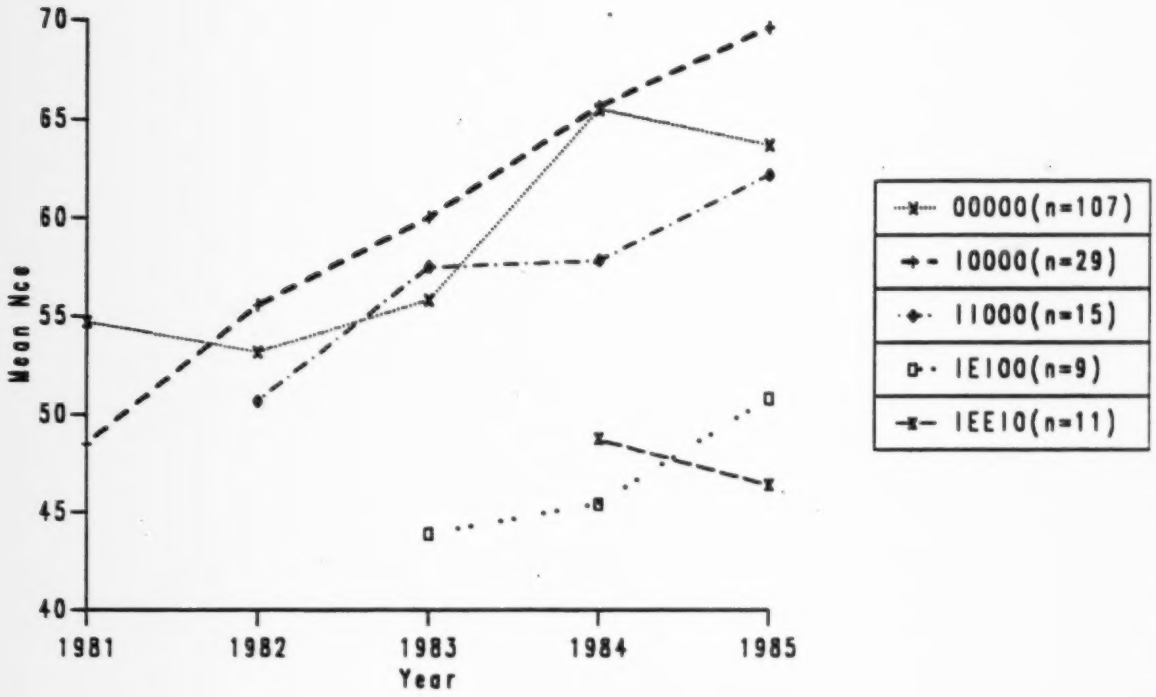
Pattern of Service	N	Mean Posttest	Mean NCE Spring After Exit	Adjusted Mean NCE Spring After Exit
00000	107	54.74	53.18	52.78
I0000	29	48.47	55.56	57.04
	Analysis of Covariance F=1.97 df=1,133 p=ns			
	% of Variance accounted for=.07			
00000	107	53.18	55.81	55.71
II000	15	50.68	57.48	57.48
	Analysis of Covariance F=.85 df=1,119 p=ns			
	% of Variance accounted for=.35			
00000	107	55.81	65.46	64.87
IEI00	9	43.90	45.41	52.34
	Analysis of Covariance F=9.98 df=1,113 p=.00			
	% of Variance accounted for=.52			
00000	107	65.46	63.66	62.45
IEEI0	11	48.75	46.41	58.14
	Analysis of Covariance F=1.75 df=1,115 p=ns			
	% of Variance accounted for=.63			

Analysis of
1985 Scores

Pattern of Service	N	Mean Posttest	Mean 1985 NCE	Adjusted 1985 Score
00000	107	54.74	63.66	63.16
I0000	29	48.47	69.54	71.36
	Analysis of Covariance F=7.59 df=1,133 p=.00			
	% of Variance accounted for=.13			
00000	107	53.18	63.66	63.47
II000	15	50.68	62.14	63.49
	Analysis of Covariance F=.00 df=1,119 p=ns			
	% of Variance accounted for=.36			
00000	107	55.81	63.66	63.11
IEI00	9	43.90	50.79	57.36
	Analysis of Covariance F=2.05 df=1,133 p=ns			
	% of Variance accounted for=.46			

Figure 4

COMPARISON OF MATH SCORES WITH NON-CHAPTER 1 STUDENTS
STUDENTS WITH SIX YEARS OF SCORES



These results suggest that the former Chapter 1 students as a group were able to retain their achievement levels relative to the comparison students after exit from the program. However, with the exception of the two highest groups of former Chapter 1 math students, the achievement gap between the former Chapter 1 and comparison students was not narrowing and would increase if the former Chapter 1 students continued the trends observed after termination of services.

3. Why did the former Chapter 1 students leave the program?

Tables 22 and 23 present the reasons Chapter 1 students ceased to receive reading and math services. The data show that high achievement accounted for most of the reading (58.01 percent) and math (87.50 percent) terminations for students with six years of test scores. However, almost half of those students were above the district grade equivalent criteria

but still below the 50th percentile, and some had posttest scores below the 20th percentile and clearly still needed service. In addition, 47 percent of the former reading students with test scores every year were still below the grade equivalent criteria at the time services were discontinued and some of these students had posttest scores below the 10th percentile. Presumably this group might include students who were terminated due to cutbacks in funding, parental refusal, participation in other categorical programs and/or teacher recommendation. However, subsequent analysis showed that only one of the former reading students was in a bilingual/ESL program the year after Chapter 1 services were discontinued and only two were in special education programs. A much smaller percentage (12.50) of the math students were known to be below the grade equivalent criteria at the time of termination and only one of these students was in a bilingual/ESL program the next year.

Table 22
Reason for Discontinuation of Chapter 1 Reading Services

Students with Six Years of Test Scores	Pattern of Service I0000 N	IE000 N	IEI00 N	IEEI0 N	Total N	Mean Posttest NCE	Minimum NCE	Maximum NCE
Tested out								
At or above 50th%ile	19	9	2	12	42	60.03	49.50	79.60
Above GE[1] Criteria but below 50th%ile	22	6	5	3	36	41.45	23.00	48.90
Unknown, still below GE criteria	32	18	11	13	74	31.55	6.70	43.60
Parent refusal	0	3	0	0	3	32.20	21.80	38.30
Total	73	36	18	28	155			
All Chapter 1 Reading Students								
Tested out								
At or above 50th%ile	22	11	4	16	53	58.83	49.50	77.60
Above GE criteria but below 50th%ile	27	17	5	4	43	40.99	23.00	48.90
Unknown, still below GE criteria	65	25	16	17	122	30.42	1.00	44.10
Unknown, no test score	12	12	3	10	37	--.--	--.--	--.--
Unknown, no grade	3	--	--	--	3	25.17	6.70	48.40
Moved out of district	53	16	10	9	88	38.57	17.30	61.00
Parent refusal	--	4	--	--	4	28.00	15.40	38.30
Total	182	75	38	56	350			

[1]Grade equivalent criteria.

Table 23
Reason for Discontinuation of Chapter 1 Math Services

Students With Six Years of Test Scores	Pattern of Service: I0000 N	II000 N	IEI00 N	IEEI0 N	Total N	Mean Post Test NCE	Minimum NCE	Maximum NCE
Tested Out								
At or above 50th %tile	16	8	2	5	31	57.55	49.50	70.10
Above GE[1] Criteria but below 50th %tile	9	7	5	4	25	42.39	27.20	48.90
Unknown, still below GE Criteria	4	--	2	2	8	31.68	13.10	46.30
Total	29	15	9	11	64			
All Chapter 1 Math Students								
Tested Out								
At or above 50th %tile	17	15	3	7	42	57.98	49.50	86.90
Above GE Criteria but below 50th %tile	11	8	7	8	34	42.99	27.20	48.90
Unknown, still below GE criteria	8	1	3	5	17	29.84	1.00	46.30
Unknown, no test score	6	10	3	4	23	--	--	--
Moved out of district	9	2	3	1	15	--	--	--
	51	36	19	25	131			

[1] Grade equivalent criteria.

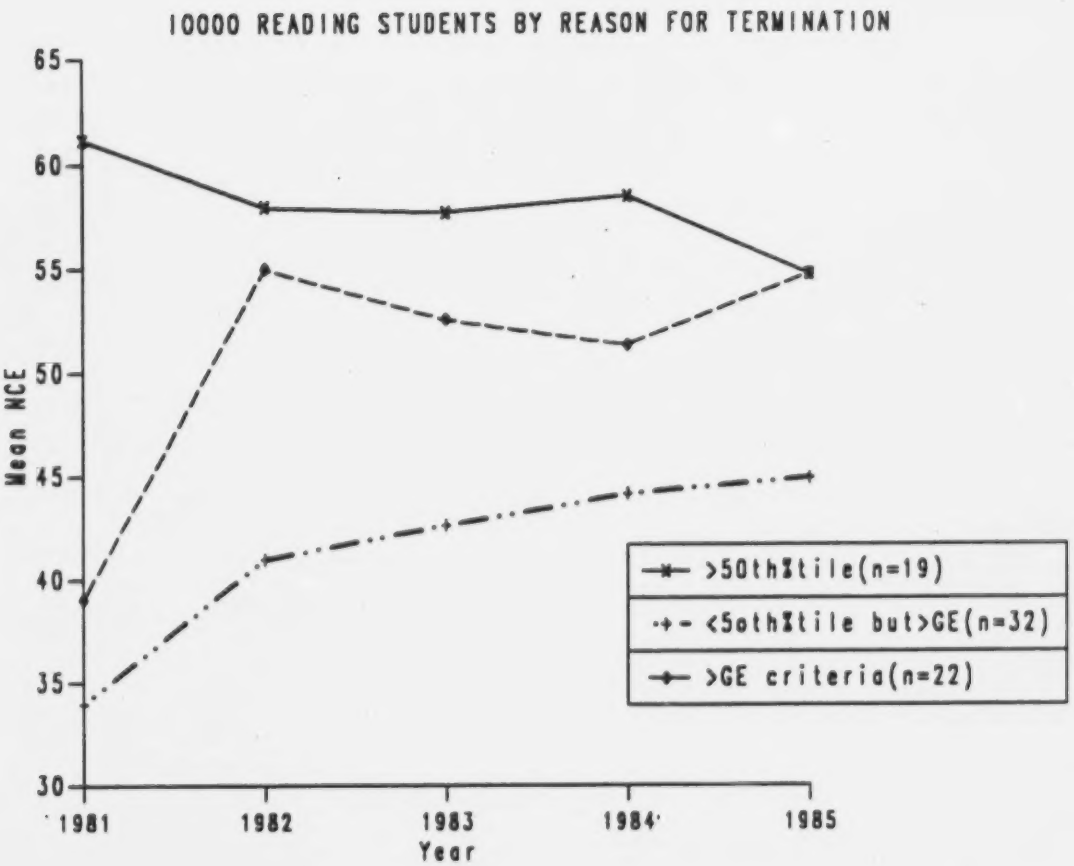
These findings lead one to postulate that the dropoff in scores which occurred after termination of Chapter 1 services was due to students who were below the grade equivalent criteria at the time of termination. However, subsequent analysis showed significant correlations between the reason services were terminated (> 50th percentile = 1, > grade equivalent criteria but < 50th percentile = 2, and < grade equivalent criteria = 3) and gain after the posttest for three of the four reading groups and two of the four math groups. In other

words, students who tested out tended to have the lowest gains. These results are presented in Table 24. In addition, Figure 5 shows a graph of the data for the first reading group (I0000). Possible explanations for these findings are that the scores for students who had posttest scores above the 50th percentile were spurious; that these students experienced the greatest loss after termination of services because they were able to benefit from the program the most; and/or, that the scores show regression toward the mean.

Table 24
Correlations Between Reason for Termination and Gain After Posttest

Pattern of Service	Reading	Math
I0000	.4148 n(73) p(.000)	.4007 n(29) p(.031)
II000	.2833 n(36) p(.021)	.6813 n(15) p(.011)
IEI00	.3829 n(18) p(ns)	.4695 n(9) p(ns)
IEEI0	.5316 n(28) p(.004)	.0801 n(11) p(ns)

Figure 5



4. a. What other categorical programs did former Chapter 1 students participate in since leaving the program? What has been the rate of participation in these programs and how long were services received?

Tables 25 and 26 show the participation rates in other categorical programs after exit from Chapter 1 and mean years of service received. The total number of students eligible to participate is also shown, as only two districts had bilingual/ESL programs and only one district had a migrant education program. The data show that only 6 of the former reading students who had six years of test scores (i.e., were included in the analysis of achievement data), or 3.87 percent, participated in any of the programs. The overall participation rate for former math students included in the analysis of achievement data was even lower, with only 1 of the 64 students participating. When all students who did not move were included in the analysis, the participation rates increased to 7.05 and 3.57 percent respectively.

Table 25
Participation in Other Categorical Programs
Since Leaving Chapter 1
Former Chapter 1 Reading Students
Pattern of Service

Students With Six Years of Scores	I0000 Total N	I0000 # Participating	I0000 % Participating	I0000 Mean Yrs. Service	I1000 Total N	I1000 # Participating	I1000 % Participating	I1000 Mean Yrs. Service	IE100 Total N	IE100 # Participating	IE100 % Participating	IE100 Mean Yrs. Service	IEE10 Total N	IEE10 # Participating	IEE10 % Participating	IEE10 Mean Yrs. Service
Special Education[1]	73	1	1.4	.06	36	--	--	--	18	--	--	--	28	--	--	--
Bilingual/ESL[2]	43	1	2.3	.03	21	4	19.0	1.9	9	--	--	--	17	--	--	--
Migrant Education[3]	36	--	--	--	10	--	--	--	4	--	--	--	9	--	--	--
All Students Who Did Not Move																
Special Education[1]	110	4	3.6	.11	57	3	5.3	.14	28	1	3.6	.07	46	1	2.2	.02
Bilingual/ESL[2]	68	1	1.5	.02	34	6	17.6	.18	14	--	--	--	25	--	--	--
Migrant Education[3]	53	--	--	--	13	1	7.7	.08	8	--	--	--	15	--	--	--

[1] All districts had programs
[2] Two districts had programs
[3] One district had a program

Table 26
Participation in Other Categorical Programs
Since Leaving Chapter 1
Former Chapter 1 Math Students
Pattern of Service

Students With Six Years of Scores	I0000 Total N	I0000 # Participating	I0000 % Participating	I0000 Mean Yrs. Service	I1000 Total N	I1000 # Participating	I1000 % Participating	I1000 Mean Yrs. Service	IE100 Total N	IE100 # Participating	IE100 % Participating	IE100 Mean Yrs. Service	IEE10 Total N	IEE10 # Participating	IEE10 % Participating	IEE10 Mean Yrs. Service
Special Education[1]	29	--	--	--	15	--	--	--	9	--	--	--	11	--	--	--
Bilingual/ESL[2]	17	--	--	--	4	--	--	--	3	1	33.3	.67	3	--	--	--
All Students Who Did Not Move																
Special Education[1]	39	1	2.6	.08	33	--	--	--	16	1	6.3	.13	24	--	--	--
Bilingual/ESL[2]	20	--	--	--	8	1	12.5	.38	5	1	20.0	.40	8	--	--	--

[1] All districts had programs
[2] Two districts had programs

b. How do former Chapter 1 students compare with similar students who did not receive services in terms of participation in other categorical programs?

Chi-square analysis was used to determine if there were significant differences between the former Chapter 1 students and comparison students in terms of the proportions of students participating in special education programs. The analyses were done for participation before and after exit from Chapter 1, for reading and math, and for students who had six years of test scores and all who did not move. Table 27 presents the analyses for reading and math students who had six years of test scores. In all cases where there were differences more of the comparison students participated in special education programs. However, none of the differences were significant. It should also be noted that only special education students who are mainstreamed can typically participate in Chapter 1 and special education at the same time. Therefore, few Chapter 1 students would be expected to have participated in special education before exit from Chapter 1. The analyses for all students who were in their district all five years also showed no significant differences and thus are not shown.

The twenty-six students in the study who participated in bilingual/ESL programs and two students who participated in migrant education were all Chapter 1 students. Therefore, participation rates in these programs were not compared to the non-Chapter 1 students.

Table 27
Comparison of Rate of Participation in
Special Education Programs
Students with Six Years of Scores

Reading

Pattern of Service	N	1980 to Exit Participants	%	p	Exit to 1985 Participants	%	p
00000	144	5	3.5	ns	3	2.1	ns
I0000	73	2	2.7		1	1.4	
00000	144	5	3.5	ns	1	.7	ns
II000	36	1	2.8		--	--	
00000	144	6	4.2	ns	1	.7	ns
IEI00	18	--	--		--	--	
00000	144	6	4.2	ns	--	--	ns
IEEI0	28	1	3.6		--	--	

Math

00000	107	2	1.7	ns	3	2.8	ns
I0000	29	--	--		--	--	
00000	107	2	1.9	ns	2	1.9	ns
II000	15	--	--				
00000	107	4	3.7	ns	1	.9	ns
IEI00	9	--	--				
00000	107	5	4.7	ns	--	--	ns
IEEI0	11	--	--		--	--	

5. How do former Chapter 1 program participants compare with similar students who did not receive services in terms of retentions and attendance?

Retentions

Chi-square analysis was used to determine if there were significant differences in the retention rates of former Chapter 1 reading students and comparison students. The results of this analysis for students with six years of scores are presented in Table 28 and show significant differences for three of the four comparisons of rates from exit to 1985 and that in all four cases the former Chapter 1 students had higher retention rates. The analyses were repeated for the period between 1980 and exit from Chapter 1 and showed that all of the differences were significant.

Table 28
Comparison of Retention Rates for Reading
Students With Six Years of Scores

		1980 to Exit			Exit to 1985		
Pattern of Service	N	# Retained	%	p	# Retained	%	p
00000	144	5	6.3	.01	11	7.6	.01
I0000	73	14	19.7		15	20.5	
00000	144	18	12.5	.02	2	1.4	.02
II000	36	11	30.6		4	11.1	
00000	144	20	13.9	.05	--	--	.00
IEI00	18	6	35.3		5	27.8	
00000	144	20	13.9	.00	--	--	ns
IEEI0	28	11	42.3		1	3.6	

T-tests were also used to determine if there were significant differences in the average number of years retained before and after exit from Chapter 1. These results for reading students with six years of test scores are presented in Table 29 and show significant differences for the I0000 and IEI00 and comparison students after exit. In addition, all of the differences prior to exit were significant.

Table 29
T-Tests of Mean Years Retained
Reading Students with Six Years of Scores

Pattern of Service	N	1980 to Exit Mean	SD	t	p	Exit to 1985 Mean	SD	t	p
00000	144	.06	.24	3.01	.00	.08	.06	2.46	.02
I0000	73	.25	.49			.21	.25		
00000	144	.13	.33	2.19	.03	.01	.01	1.80	ns
II000	36	.31	.47			.11	.32		
00000	144	.14	.35	2.06	.05	--	--	2.56	.02
IEI00	18	.44	.62			.28	.46		
00000	144	.19	.35	2.92	.00	--	--	1.00	ns
IEEI0	28	.80	.64			.04	.19		

Since the analyses above indicated that there were significant differences between Chapter 1 and comparison reading students in retentions before and after exit from the program, the total number of retentions from 1978-79 through 1985 was used with the posttest scores as a covariate of the 1985 scores. None of the F ratios for total retentions, which ranged from .038 to .332, were significant. This indicated that controlling for retentions did not help explain differences in 1985 test scores any better than the posttest scores had done alone. This appears to be due to the (negative) correlation between test scores and retentions. Therefore, the posttest scores had already accounted for the variance explained by retentions, and retentions were deleted from the analysis.

Tables 30 and 31 present the results of the Chi-square analyses and t-tests for former Chapter 1 math and comparison students who had six years of test scores. In contrast to the results for reading, the tables show very few significant differences between Chapter 1 and comparison students. However, this appears to be due to the small sample sizes in some groups and it should be noted that some large differences were not significant. It should also be noted that the former Chapter 1 students consistently had higher rates of retentions and average years retained.

Table 30
Comparison of Retention Rates for Math
Students With Six Years of Scores

Pattern of Service	N	1980 to Exit # Retained	1980 to Exit %	1980 to Exit p	Exit to 1985 # Retained	Exit to 1985 %	Exit to 1985 p
00000	107	4	3.7	ns	5	4.7	ns
I0000	29	2	6.9		5	17.2	
00000	107	6	5.6	ns	3	2.8	ns
II000	15	3	20.0		2	13.3	
00000	107	8	7.5	.00	1	.9	ns
IEI00	9	6	66.7		1	11.1	
00000	107	8	7.5	ns	1	.9	ns
IEEI0	11	2	20.0		1	9.1	

Table 31
T-Tests of Mean Years Retained
Math Students with Six Years of Scores

Pattern of Service	N	1980 to Exit Mean	1980 to Exit SD	1980 to Exit t	1980 to Exit p	Exit to 1985 Mean	Exit to 1985 SD	Exit to 1985 t	Exit to 1985 p
00000	107	.04	.19	.62	ns	.05	.21	1.69	ns
I0000	29	.7	.26			.17	.38		
00000	107	.06	.23	1.32	ns	.03	.17	1.14	ns
II000	15	.20	.41			.13	.35		
00000	109	.07	.26	3.51	.00	.01	.08	.91	ns
IEI00	9	.67	.50			.11	.33		
00000	107	.07	.26	1.41	ns	.01	.10	.89	ns
IEEI0	11	.36	.67			.09	.30		

Attendance

Table 32 shows that the two lowest groups of former Chapter 1 reading students had significantly more days of absence per year after exit from Chapter 1 than the comparison students. All of the other groups had slightly more days of absence than the comparison students, but the differences were not significant. Before exit from Chapter 1, the II000 reading students had significantly more days absence, and the IEEI0 reading students bordered on having significantly more absences than the comparison students.

Table 32
T-Tests of Mean Days Absence/Year for
Students with Six Years of Scores

Reading Pattern of Service	N	1980 to Exit Mean	SD	t	p	Exit to 1985 Mean	SD	t	p
00000	144	7.42	5.18	.11	ns	6.56	4.04	1.19	ns
I0000	73	7.56	7.53			7.49	6.04		
00000	144	6.57	4.40	2.67	.01	6.84	4.39	1.83	ns
II000	36	9.83	7.01			9.06	6.91		
00000	144	6.79	4.23	1.25	ns	6.65	4.63	2.14	.05
IEI00	18	9.19	7.99			12.50	11.49		
00000	144	6.76	4.06	2.00	.055	6.65	5.22	2.04	.05
IEEI0	28	10.10	8.67			11.25	11.69		
Math									
00000	107	7.07	6.12	2.23	.03	7.08	4.96	1.77	ns
I0000	29	11.21	9.50			9.33	6.34		
00000	107	6.79	5.20	.88	ns	7.27	5.48	1.00	ns
II000	15	8.33	6.52			8.87	5.85		
00000	109	7.08	5.21	.60	ns	7.08	5.82	.46	ns
IEI00	9	8.44	6.62			8.12	6.99		
00000	107	7.06	4.94	.69	ns	7.16	6.84	1.39	ns
IEEI0	11	8.68	7.67			12.36	12.26		

REFERENCES

1. Kennedy, M., M. Jung, and Martin, O. E. Poverty, Achievement and the Distribution of Compensatory Education Services. Office of Educational Research and Improvement, U.S. Department of Education. January 1986.

2. Knoyer, C. E., Cooper, D. M., Saxton, D. E. and Hoepfner, R. The Effects of Discontinuing Compensatory - Education Services. Technical Report #11 from the Study of the Sustaining Effects of Compensatory Education on Basic Skills. System Development Corporation, Santa Monica, CA. February 1981.

APPENDICES

A. Definitions
B. Data Collection and Coding Form
C. Keypunching Instructions

APPENDIX A

DEFINITIONS

The following definitions have been used in this report:

Chapter 1 student - A student identified by the school districts as having participated in the Chapter 1 program or its predecessor Title I.

Special education student - A handicapped person who participated in a special education program provided by a school district.

Commonwealth of Pennsylvania - Department of Education

DEAS-151 (3/73)

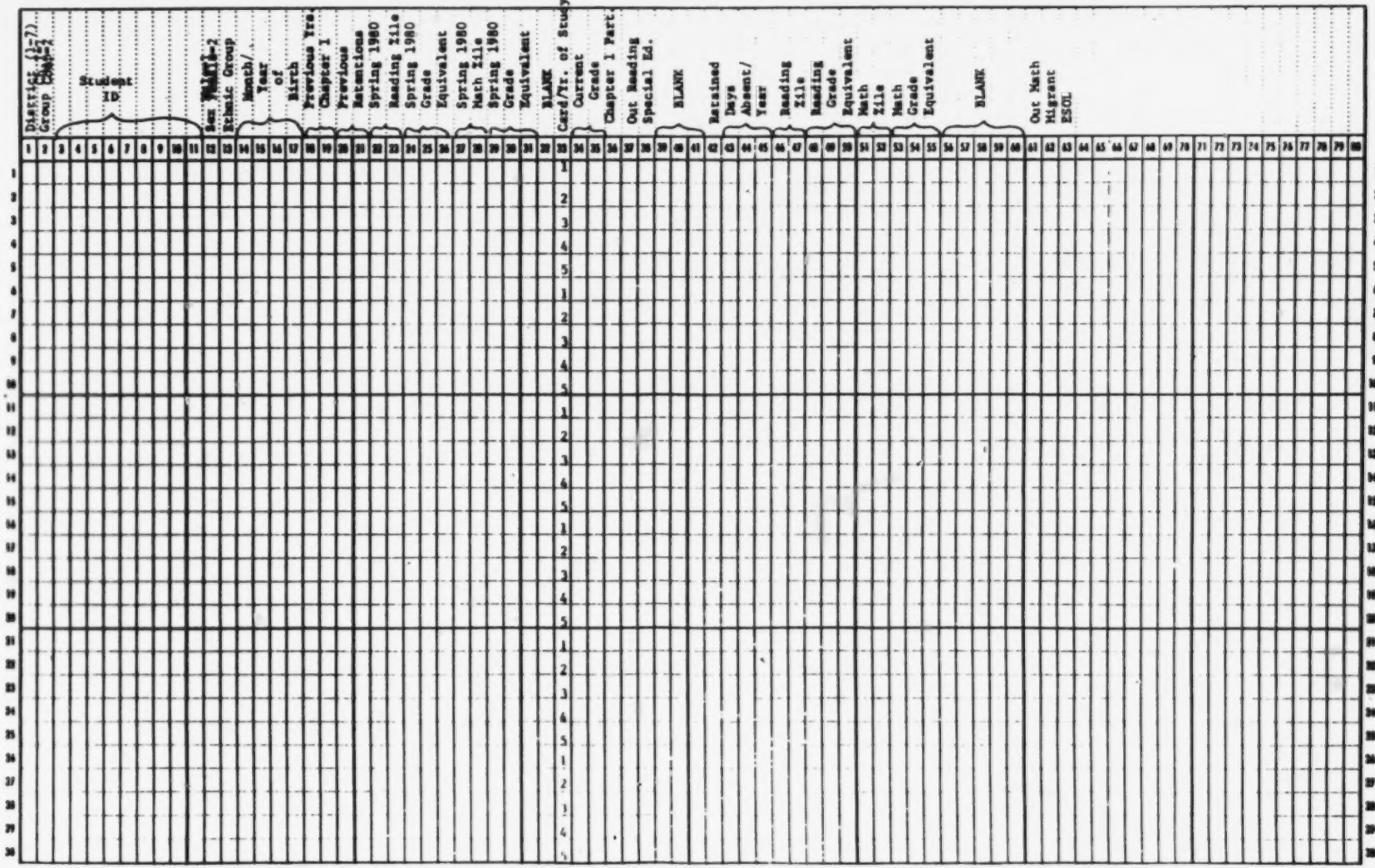
DATA PREPARATION WORKSHEET

Program: Chapter 1 Study

Date:

Description of Data:

Prepared by:



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APPENDIX B

APPENDIX C

CARD PUNCHING OR VERIFYING INSTRUCTIONS

DEEO-802 (1/71)

JOB NAME	JOB NO.	CONTROL PANEL NO.	OPERATION NAME	OP. CODE	MACH. TYPE
Chapter 1 Study					

FREQUENCY	DUE IN		DUE OUT		ESTIMATED VOLUME	EST. TIME
☐ Daily ☐ Monthly ☐ Weekly ☐ Quarterly ☐ Biweekly ☐ Annual ☐ Semimonthly ☐ Other	TIME	DATE	TIME	DATE		HOURS TENTHS

PROGRAM CARD NO. CARD ELECTRO (FORM) NO.

SWITCH SETTINGS			SPECIAL FEATURES USED
ON	OFF	SWITCH	☐ ALTERNATE PROGRAM ☐ HI SPEED SKIP
		PROGRAM UNIT	☐ AUXILIARY DUPLICATE ☐ INTERSPERSED GANG PUNCH
		AUTO FEED	☐ CARD REVERSING ☐ CONTINOUS SKIP
		AUTO SKIP–AUTO DUPL.	☐ CARD INSERTION ☐ CONTINUOUS SPACE
		PRINT	☐ DECIMAL TABULATION ☐ SELF CHECKING NO.
		SELF CHECKING NO.	

SOURCE DOCUMENTS USED: Data Collection and Coding Forms

DISPOSITION OF CARDS: Return to Carol Bellew

RECEIVED FROM: Carol Bellew

DOCUMENTS

CARD FIELD	COLUMNS FROM	COLUMNS TO	FUNCTION*	REMARKS
1. District	1			1-7
2. Group	2			Chapter 1 = 1 Comparison = 2
3. Student ID	3	11		
4. Sex	12			Male = 1 Female = 2
5. Ethnic group	13			White=1 Black=2 Hispanic=3 Other=4
6. Month/Year of Birth	14	17		
7. Previous years Chapter 1	18	19		
8. Previous retentions	20	21		
9. Reading %ile rank, Spring 1980	22	23		
10. Reading grade equivalent, Spring 1980	24	26		
11. Math %ile rank, Spring 1980	27	28		
12. Math grade equivalent, Spring 1980	29	31		
13.	32			Blank
14. Card/Year of Study*	33			1-5
15. Grade	34	35		
TOTAL KEY STROKES PER CARD—				

FUNCTION*	SYMBOL
DUPLICATE	D
PUNCH	P
SKIP	S
X-SKIP	XS
VERIFY	V
SELF NO. CK	C

Date: _____ Section _____ Page ___ ___

DEEC-802 (1/71)

JOB NAME	JOB NO.	CONTROL PANEL NO.	OPERATION NAME	OP. CODE	MACH. TYPE

CARD FIELD	COLUMNS FROM	COLUMNS TO	FUNCTION*	*REMARKS
16. Chapter 1 Participation	36			Reading=1 Math=2 Both=3
17. Reason out of Chapter 1 Reading	37			1-6
18. Special Education Participation	38			Yes=1-8 No=0
19.	39	41		Blank
20. Retained	42			Yes=1 No=0
21. Attendance	43	45		# days missed
22. Reading %ile rank	46	47		
23. Reading grade equivalent	48	50		
24. Math %ile rank	51	52		
25. Math grade equivalent	53	55		
26.	56	60		Blank
27. Reason out of Chapter 1 Math	61			1-6
28. Migrant education	62			Yes=1 No=0
29. ESOL	63			Yes=1 No=0
*Repeat 33-63 for each year				

Date: _____ Section _____ Page _____